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(54) **Digital signal processing apparatus.**

(57) A digital signal processing apparatus which is used for the computation of coding image signals or the like and a motion compensative operation method which uses a digital signal processing apparatus. The apparatus comprises a plurality of signal processing means arranged in parallel and control means which assigns loads to the signal processing means so that the signal processing means have even computation volumes. Alternatively, an address generator is provided for each of data sets entered independently. An intermediate check is conducted during the computation for a block which involves a motion compensative operation.

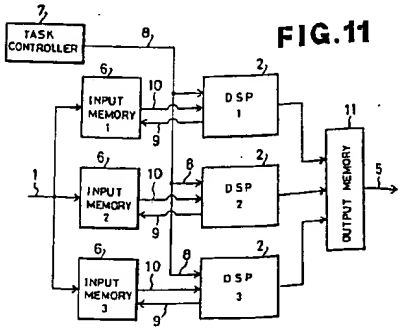

FIG.11

EP 0 329 151 A3

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Application Number
EP 89 10 2717
Page 1

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
Y	US-A-4 363 104 (NUSSMEIER) 7 December 1982 * column 15, line 45 - column 17, line 3 * * abstract *	1,2	G06F9/46 G06F15/80 G06F15/70
Y	IEEE TRANSACTIONS ON COMPUTERS vol. C-36, no. 5, May 1987, NEW YORK US pages 570 - 580 BERGER 'A partitioning strategy for nonuniform problems on multiprocessors' * page 570, left column, line 1 - page 572, left column, line 5; figures 1-4 *	1,2	
A	IEE PROCEEDINGS E. COMPUTERS & DIGITAL TECHNIQUES vol. 134, no. 2, March 1987, STEVENAGE GB pages 119 - 124 NGAN 'Parallel image-processing system based on the TMS32010 digital signal processor' * page 119, left column, line 1 - page 122, left column, line 43; figures 1-3 *	1,2	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	ELECTRONIC DESIGN vol. 33, no. 5, March 1985, HASBROUCK HEIGHTS, NEW JERSEY US pages 189 - 198 MAGAR 'interface arrangement suits digital processor to multiprocessing' * page 189, right column, line 1 - page 191, right column, line 6; figures 1,2 *	1,2	G06F
A	EP-A-0 014 581 (FUJITSU) 20 August 1980 * abstract * * page 2, line 3 - page 4, line 38; figure 2 *	1,2	

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	15 DECEMBER 1992	SCHENKELS P.F.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.

☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

See Sheet B.

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

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Application Number

EP 89 10 2717

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	COMPCON FALL 77 6 September 1977, WASHINGTON D.C. , USA pages 418 - 422 MOTT 'Multimicroprocessor with queue memories' * page 418, left column, line 1 - page 419, right column, line 32; figures 1-3 * ---	3	
A	IEEE JOURNAL OF SOLID-STATE CIRCUITS vol. SC-21, no. 5, October 1986, NEW YORK US pages 750 - 763 VAN WIJK 'A 2 um CMOS 8-MIPS digital signal processor with parallel processing capability' * page 756, left column, line 12 - right column, line 9; figure 16 * ---	3	
A	PROCEEDINGS OF THE 1985 INTERNATIONAL CONFERENCE ON PARALLEL PROCESSING 20 August 1985, PENNSYLVANIA, USA pages 649 - 651 CORAOR 'A reconfigurable multiprocessor' * the whole document * ---	3	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	PROCEEDINGS ICASSP 87 vol. 4, 6 April 1987, DALLAS, TEXAS, USA pages 1899 - 1902 MCGRATH 'A WE-DSP32 based , low-cost, high performance, synchronuous multiprocessor for cyclo-static implementations' * the whole document * ---	3	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	15 DECEMBER 1992	SCHENKELS P.F.

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Y	PROCEEDINGS COMPEURO 87 11 May 1987, HAMBURG, GERMANY pages 78 - 83 VARY 'VLSI signal processors : architectures and applications' * page 81, left column, line 45 - page 82, right column, line 25; figures 3-5 *	10,11	
Y	PROCEEDINGS ICASSP 86 vol. 1, 7 April 1986, TOKYO, JAPAN pages 385 - 388 VAN WIJK 'On the ic architecture and design of a 2 um CMOS 8 mips digital signal processor with parallel processing capability : the PCB5010/5011' * the whole document *	10,11	
A	IEEE INTERNATIONAL SOLID STATE CIRCUITS CONFERENCE vol. 30, no. 1, February 1987, NEW YORK US pages 158 - 159 KANEKO 'A 50 ns DSP with parallel processing architecture' * the whole document *	10,11	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	PROCEEDINGS ICASSP 86 vol. 1, 7 April 1986, TOKYO, JAPAN pages 409 - 412 NISHITANI 'advanced single-chip signal processor' * page 409, left column, line 1 - page 412, left column, line 9; figures 1-4 *	10,11	
A	US-A-4 528 625 (MCDONOUGH) 9 July 1985 * column 3, line 30 - column 11, line 3; figures 1,2 *	10,11	

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The present search report has been drawn up for all claims

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THE HAGUE	15 DECEMBER 1992	SCHENKELS P.F.

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	US-A-4 661 849 (HINMAN) 28 April 1987 * column 3, line 18 - column 4, line 19 *	12	
A	SYSTEMS, COMPUTERS, CONTROLS vol. 12, no. 4, July 1981, WASHINGTON US pages 37 - 45 ARIKI 'Moving picture analysis based on a hierarchical model approach' * page 42, left column, line 11 - page 43, right column, line 4 *	12	
A	US-A-4 667 233 (FURUKAWA) 19 May 1987 * abstract *	12	
A	EP-A-0 205 091 (NEC) 17 December 1986 * abstract * * page 5, line 7 - line 24; figure 3 *	12	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)

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LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-2: Load distribution by means of unequal data memory allocation.

2. Claims 3-9: Multiprocessor with task scheduling.

3. Claims 10-11: Digital signal processor architecture.

4. Claim 12: Imgae processing method.